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INFORMATION REPORT

REPORT

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SUBJECT Organization, Functions, and Personalities of the
Chemical Department, Institute 160, Fryazino

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GENERAL

See Enclosure A, an organizational chart of the Chemical Department, Institute
160, Fryazino.

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1. The Chemical Department of Institute 160 was divided into three sections:
 - a. Cathode Section
 - b. Chemistry Section
 - c. Physics Section

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The laboratories falling under each of these three sections were serviced by the
Machine Shop. A Soviet, Gleb Aleksandrovich Metlin, was the Administrative Director of the Chemical
Department. Formerly he had been supervisor of the Chemistry Section; in late 1949
he was also put in charge of the Physics Section and the newly-organized Cathode
Section, and thus he became Director of the entire Chemical Department.

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CATHODE SECTIONGalvanic Laboratory

2. Small parts, received from the Machine Shop, were gold, silver, and nickel plated and pickled (using a voltage of 68 and varying amperage) in this laboratory. The parts were handed inside through a small window which had been cut into the outer door. [redacted] 50X1-HUM

3. Filaments, which were shaped by winding on metal rods, were sent to the Galvanic Laboratory to have the rods "eaten out"--leaving only the spiral filament. The filaments and cores were received from the Special Heating Laboratory [redacted] (These filaments were heated there, to between 1000°-1400°C, to remove the stress caused by the bending process.) They were then sent to this laboratory to have the core removed by acid, and on to [redacted] the Insulating Coating Laboratory, for coating. The core was made of molybdenum. 50X1-HUM

4. No Germans were employed there. [redacted] the supervisor of this laboratory: 50X1-HUM

Lebedeva, Ing Chemistry. [redacted]

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At least 12 other people worked in this laboratory; one was an engineer, two were female technicians, and there were probably nine assistants.

PHYSICS SECTIONPhysics Laboratory

5. One of the functions of this laboratory was to determine the coefficient of expansion of glass which was used in the television tube section. Several very good metallurgical microscopes [redacted] were used in this laboratory to measure the thickness of wire and sheet metal. A Soviet female technician prepared the metal samples for microscopic examination by polishing them, etc. Another Soviet girl photographed the results, attaching the photographic equipment to the microscope and using film plates or packs which took photographs approximately 9 x 12 cm in size. This laboratory contained a great deal of other German-made equipment [redacted] 50X1-HUM

6. [redacted] personnel employed in the Physics Section [redacted]: 50X1-HUM

Anhalt, (first name may be Herbert), Ing [redacted]

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Prang, Willi, Dr

--

Salniko, Ing Physics

--

Von Brueck, Dipl Ing

--

There were six other persons employed in this laboratory--an engineer, a male technician, two female technicians and two female assistants.

CHEMISTRY SECTIONInsulating Coating Laboratory

7. This laboratory was engaged in the coating of vacuum tube elements.

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were employed there:

The following people

Alekse, Tonia (sic)

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Frank, Susan

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Kireh, Kaethe

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Lebedeva, Lyubov

Zaytseva, Lydia

Stern, Willi

Trekhaeva, Lusia (approximate spelling)

Varakina, Nina

Kaba (surname not known)

Tamara (surname not known)

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Ceramics Laboratory

9. All sorts of ceramic materials were produced in this laboratory--using German formulas exclusively. Some of these materials were: bases for grids, flat round discs, and other small parts

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the following were employed there:

Hasse, Edith

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Mishkovsky

In addition to those mentioned above, there was a female engineer and two female helpers employed in the Ceramics Laboratory.

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Analytic Laboratory

10. Chemical and spectrum analyses of materials used in tube production was done there. The following were employed there:

Grove, Albert Dipl Ing

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Leff

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In addition to those mentioned, there were at least 25 others employed in the Analytic Laboratory--of which there were five female engineers, one male engineer, and at least 10 female technicians.

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Special Heating Laboratory

11. Various heating apparatus were located in this laboratory. [redacted] the Sinter Process Oven /see Enclosure (B) 50X1-HUM
 for a sketch of this oven/. For cleaning anodes, the temperature was kept between 800°-900°C while for the sinter process it was 900°C. The filaments were sintered at 1700°C. The temperature for the cathodes was kept between 800°-900°C. All this heating was done with hydrogen. The technician used two tungsten rods. The shorter rod was used for placing the "ship" or "tray" in the exact center of the oven; and then, after heating, the longer rod was used to place the "ship" in the water-cooled portion of the oven for cooling. The size of the "ship" was half the length of the oven; after the rod was removed, the "ship" rested on the corundum tube. The hydrogen pressure used was between 50 and 100 millimeters---this pressure was found to provide the proper temperature.

The following were employed there:

Feigl, Erich Ing [redacted] 50X1-HUMPetrova, Ing [redacted] 50X1-HUM

[redacted] five other females worked in this laboratory; [redacted]

Inside Tube Coating Laboratory

12. Most of the work of this laboratory consisted of coating tube bases with lacquer and blackening the inside of television tubes. A material similar to graphite was finely sifted for application onto the inside walls of the tube. [redacted] this process was done 50X1-HUM
 in another laboratory of the Institute in 1951-52. Only one or two television tubes were experimented on daily. [redacted] in this laboratory a girl sprayed zirconium on anodes. [redacted]

[redacted] the personnel who worked there: 50X1-HUM

Kirson, Ing Chemistry 50X1-HUMGetter Materials Laboratory

13. Chem Ing Yasny, a Soviet, was chief of this laboratory. [redacted]

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Cathode Assembly Laboratory

14. This laboratory was engaged in the coating of cathodes. The machine used in Method #2 [redacted] was located here. It was used for coating (by spraying) tungsten wire spools with a mixture of 50% barium, 45% strontium, and 5% calcium. (The formula followed was the same one which was used at Telefunken, Berlin.) This was the only machine of its kind at Institute #160. Cathodes were also nickel-coated in the Cathode Assembly Laboratory. The nickel powder--formula NI (Co)₄--was applied by painting it onto the cathode with a brush and then oven-heated to 700°C. The carbonate mixture (equal portions of barium and strontium plus a solution of nitro-cellulose) was applied with a brush to fill the holes which occasionally resulted from the nickel powder mixture; sometimes two or three applications were necessary to fill the holes properly.

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15. Another function of this laboratory was the application of a black paste ([redacted] onto long, hollow, metal tubes, 5-7 mm in diameter and 30-40 mm long. (The metal was lighter in color than nickel.) [redacted] these cathode heater tubes may have been used in magnetron tubes.

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[redacted] These tubes were fused in an oven at a temperature higher than 1000°C. The oven usually used was calibrated up to 1000°C, but when it was not in operable condition, an oven calibrated up to 1700°C was used instead. These ovens were put into operation only a certain time of the day. The ovens were [redacted] 17 cm x 17 cm x 35 cm long, and contained a corundum tube of aluminum oxide, where the "small ships" containing these tubes were inserted and heated [see Enclosure (B)]. Regarding the personnel employed here:

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Chenkina, Ing Chemistry

[redacted]
Four persons worked for Chenkina--a female engineer, Smokti (Party member), a female technician and two female assistants. No German personnel worked here.

Cathode Research Laboratory

16. The work done in this laboratory was kept secret; a curtain was hung behind the entrance door to prevent looking within. Germans were not permitted to enter and the people working there were forbidden to talk to the Germans. [redacted] they worked on cathode emission problems

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[redacted] Among those employed in this laboratory were:

Nikonov, Ing

Soviet

Popov, Ing

Soviet

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Tsarev, Doctor of Technical Science

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Chief of the Cathode Research Laboratory.

At least three other engineers worked in this laboratory as did one male and three female technicians.

MACHINE SHOP

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17. This shop serviced the laboratories of the Chemistry Department but was not under its jurisdiction. Pastukhov,

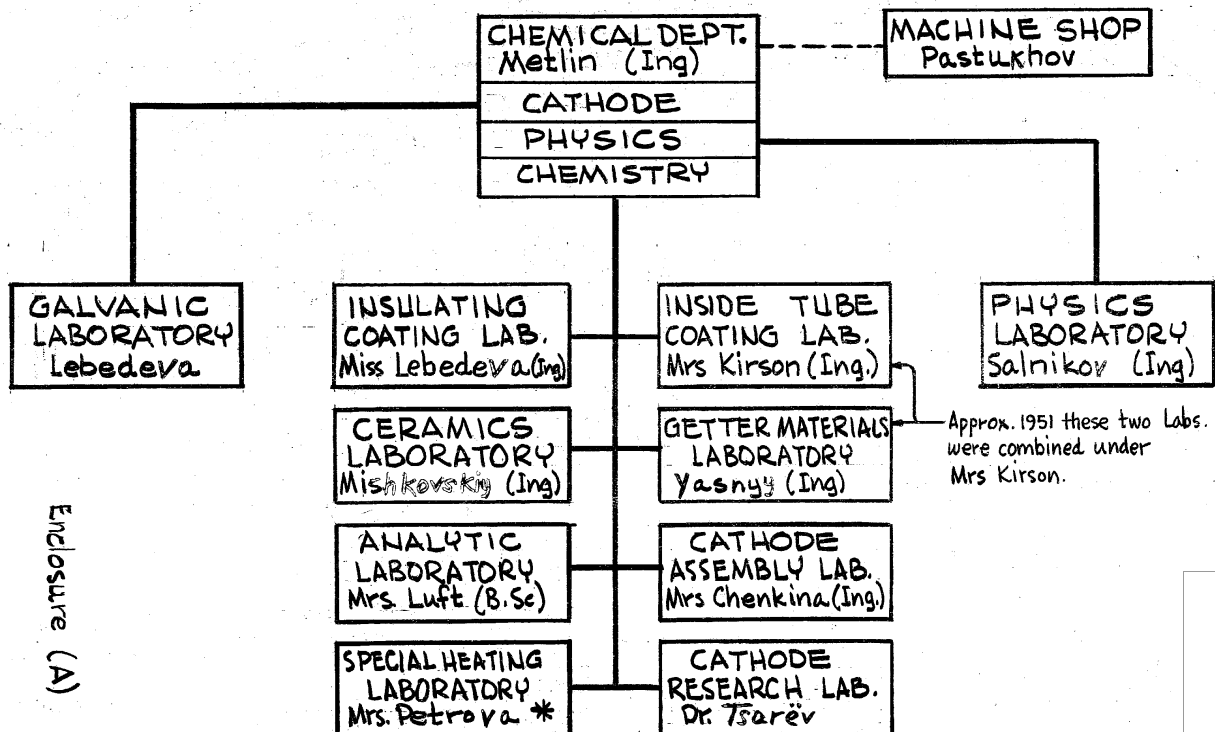
Another device manufactured in the Machine Shop was a box for evacuation of air from television tubes by using a propeller.

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- ENCLOSURE (A) Organization Chart, Chemical Department of Institute #160, Fryanino, USSR
ENCLOSURE (B) Sinter Process Oven

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CHEMICAL DEPT. of PLANT #160 at FRYAZINO-USSR
ORGANIZATIONAL CHART



* Personnel and Organization were under direction of Insulating Coating Laboratory

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Enclosure (A)

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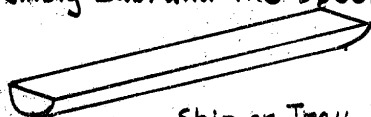
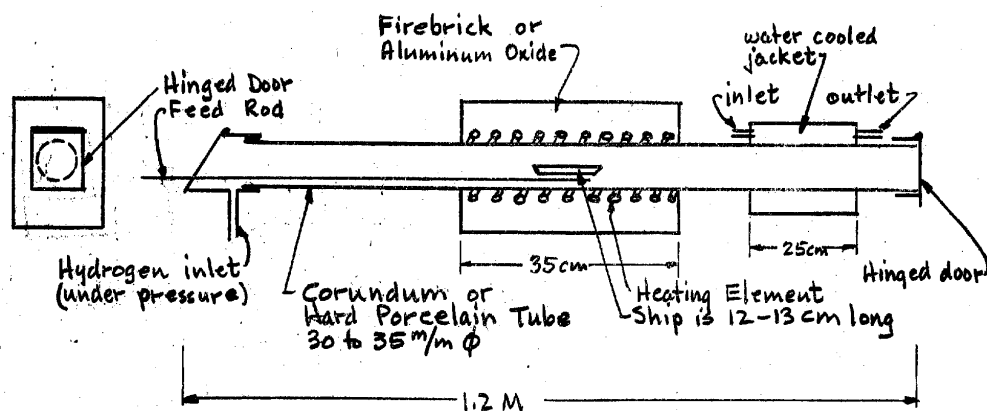
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SINTER PROCESS OVEN

This hydrogen oven was used by personnel in the Cathode Assembly Lab. and the Special Heating Lab,

Ship or Tray Detail

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Enclosure (B)